CLAIMS

1. A method for producing lactic acid, which comprises culturing a hetero-lactic acid fermentation bacteria, wherein activity of pyruvate formate-lyase (pfl) is inactivated or decreased, on a medium to which two or more kinds of amino acids are added, and recovering lactic acid from the obtained culture.

2. The method for producing lactic acid according to claim 1, wherein the hetero-lactic acid fermentation bacteria is Escherichia coli.

3. The method for producing lactic acid according to claim 2, wherein Escherichia coli is MT-10934 (FERM BP-10057) strain.

4. A method for producing D-lactic acid, which comprises culturing a bacteria, wherein activity of Escherichia coli-derived NADH-dependent D-lactate dehydrogenase (ldhA) is enhanced and activity of pyruvate formate-lyase (pfl) is inactivated or decreased, and recovering D-lactic acid from the obtained culture.

5. The method for producing D-lactic acid according to claim 4, wherein the bacteria is Escherichia coli.

6. The method for producing D-lactic acid according to claim 4 or 5, wherein culture is carried out on a medium to which two or more kinds of amino acids are added.

7. A microorganism in which activity of FAD-dependent D-lactate dehydrogenase (dld) inherent in the microorganism is inactivated or decreased, activity of pyruvate formate-lyase (pfl) is inactivated or decreased, and/or activity of Escherichia coli-derived NADH-dependent D-lactate dehydrogenase (ldhA) is enhanced.

8. The microorganism according to claim 7, wherein the

microorganism is a bacteria.

9. The microorganism according to claim 8, wherein the bacteria is Escherichia coli.

10. A method for producing D-lactic acid, which comprises culturing the microorganism according to any one of claims 7 to 9 in a liquid medium, wherein D-lactic acid is produced, accumulated, and isolated from the liquid medium.

11. The method for producing D-lactic acid according to claim 10, wherein culture is carried out on a medium to which two or more kinds of amino acids are added.

12. A method for producing D-lactic acid, which comprises culturing a microorganism in which activity of FAD-dependent D-lactate dehydrogenase (dld) is inactivated or decreased, in a liquid medium, wherein D-lactic acid is produced, accumulated, and isolated from the liquid medium.

13. The method according to claim 12, wherein the microorganism is a bacteria.

14. The method according to claim 13, wherein the bacteria is Escherichia coli.

15. A microorganism, wherein a gene encoding Escherichia coli-derived NADH-dependent D-lactate dehydrogenase (ldhA) expresses the NADH-dependent D-lactate dehydrogenase (ldhA) on the genome of the microorganism by using a promoter of a gene which controls expression of a protein involved in a glycolytic pathway, a nucleic acid biosynthesis pathway or an amino acid biosynthesis pathway.

16. The microorganism according to claim 15, wherein the

microorganism is Escherichia coli.

17. The microorganism according to claim 15 or 16, wherein activity of pyruvate formate-lyase (pfl) inherent in the microorganism is inactivated or decreased, and/or activity of FAD-dependent D-lactate dehydrogenase (dld) is inactivated or decreased.

18. Escherichia coli, which expresses Escherichia coli-derived NADH-dependent D-lactate dehydrogenase (ldhA) on the genome of Escherichia coli by using a promoter of an Escherichia coli-derived gene which controls expression of a protein involved in a glycolytic pathway, a nucleic acid biosynthesis pathway or an amino acid biosynthesis pathway, instead of using a promoter of a gene encoding the Escherichia coli-derived NADH-dependent D-lactate dehydrogenase (ldhA).

19. Escherichia coli according to claim 18, wherein the promoter of the Escherichia coli gene, which controls expression of the protein involved in the glycolytic pathway, the nucleic acid biosynthesis pathway or the amino acid biosynthesis pathway, is a promoter of an Escherichia coli-derived glyceraldehyde-3-phophate dehydrogenase gene.

20. Escherichia coli according to claim 18 or 19, wherein activity of pyruvate formate-lyase (pfl) inherent in the Escherichia coli is inactivated or decreased, and/or activity of FAD-dependent D-lactate dehydrogenase (dld) is inactivated or decreased.

21. A method for producing D-lactic acid, which comprises culturing the microorganism according to any one of claims 15 to

20 using a medium.

22. A microorganism having a TCA cycle, wherein activity of malate dehydrogenase (mdh) is inactivated or decreased, activity of pyruvate formate-lyase (pfl) is inactivated or decreased, and/or activity of FAD-dependent D-lactate dehydrogenase (dld) is inactivated or decreased.

23. The microorganism according to claim 22, wherein activity of aspartate ammonia-lyase (aspA) inherent in the microorganism is inactivated or decreased.

24. The microorganism according to claim 22 or 23, wherein the microorganism is a bacteria.

25. The microorganism according to claim 24, wherein the bacteria is Escherichia coli.

26. The microorganism according to claim 25, wherein activity of Escherichia coli-derived NADH-dependent D-lactate dehydrogenase (ldhA) is enhanced.

27. A method for producing a compound other than an organic acid formed in a TCA cycle, which comprises culturing the microorganism according to any one of claims 22 to 26 by using a medium.

28. The method according to claim 27, wherein the compound other than the organic acid is D-lactic acid.

29. The method for producing lactic acid according to any one of claims 1 to 6, 10 to 14, 21 and 28, wherein culture is carried out under aerobic conditions.

30. The method for producing lactic acid according to claim 29, wherein the aerobic conditions enable supply of oxygen which

satisfies a requirement of an oxygen-transfer coefficient K_La of not less than 1 h^{-1} and not more than 400 h^{-1} at normal pressure using water at a temperature of 30°C.

31. The method for producing lactic acid according to any one of claims 1 to 6, 10 to 14, 21 and 28 to 30, wherein the culture pH is 6 to 8.